

# Application Programming Interface

The following programs can be used in Natural applications (or in Open NSPF routines) to access Natural ISPF internal information:

- **ISP-U000 - Current Session Program**  
Provides access to Natural ISPF session data.
- **ISP-U001 - Access Shortlibs Program**  
Provides access to Natural ISPF short library name translation. If an application wants to use the dataset abbreviations defined in Natural ISPF, this program must be called.
- **ISP-U002 - Retrieve Error Texts Program**  
Reads an Natural ISPF error text and dynamically replaces parameters in the text. This can only be used in Open NSPF subprograms.
- **ISP-U003 - Read Data from Edit Session Program**  
Read data from an edit session.
- **ISP-U004 - Pass Command Script Program**  
Passes a command script to Natural ISPF and executes it when Natural ISPF is invoked next time.
- **ISP-U005 - Check for Natural Member Versions Program**  
Checks whether versions (update decks) for a Natural member exist.
- **ISP-U006 - Set Source Area Attributes Program**  
Sets source area attributes and is used in macro processing.
- **ISP-U007 - Check User Authorization Program**  
Checks whether current user is authorized to use Natural ISPF or certain parts of its functionality.

These programs are described in more detail in the following subsections.

All programs and required Natural ISPF modules are loaded into the Exit Library and into the library SYSTEM. If you wish to use the API programs, it is strongly recommended that you define either SYSTEM or SYSISPE as STEBLIB for your application.

---

## ISP-U000 - Current Session Program

This program is supplied in object form only. It is a Natural subprogram which returns information about the current Natural ISPF session and can be called from user programs outside Natural ISPF.

The following parameters must be defined:

Parameter	Format	Type	Meaning
#OBJECT	(A2)	O	Contains 2-character abbreviation of the object type. For a list of possible values, see the Table of Exits and Object Abbreviations in Section User Exits in the Natural ISPF Administration Documentation.
#FUNCTION	(A2)	O	Contains 2-character abbreviation of the function currently executed.
#SES-DATA	(A200)	O	Contains all parameters; must be redefined according to object type. A special local data area is delivered in source form for this redefinition.

### Example

The following example is a short Natural MACRO object which users can call using the COPY MACRO command from an edit session. It generates a program header and uses program ISP-U000 to obtain the name and library of the program being edited:

```

§ *
§ * MACRO GENERATES A STANDARD PROGRAM HEADER FOR THE PROGRAM
§ * BEING CURRENTLY EDITED
§ *
§ DEFINE DATA
§ LOCAL USING ISPN---L /* Redefinition of Natural data
§ LOCAL
§ 1 #OBJECT (A2)
§ 1 #FUNCTION(A2)
§ 1 #DATA (A200)
§ 1 #PROGRAM (A8)
§ 1 #TEXT (A50/5)
§ 1 #I (N2)
§ END-DEFINE
§ *
§ * GET NATURAL SESSION DATA
§ *
§ CALLNAT 'ISP-U000' #OBJECT #FUNCTION #DATA
§ MOVE #DATA TO #SES-DATA-N /* Move to redefinition
§ MOVE #MEMBER TO #PROGRAM
§ SET KEY PF3
§ SET CONTROL 'WL70C12B005/005F'
§ INPUT (AD=MIL'_' )
§ WITH TEXT '----- PROGRAM HEADING INFORMATION -----'
§ 'PROGRAM:' #PROGRAM (AD=OI)
§ 'LIBRARY:' #LIBRARY (AD=OI)
§ / 'PURPOSE:' #TEXT (1)
§ / ' ' #TEXT (2)
§ / ' ' #TEXT (3)
§ / ' ' #TEXT (4)
§ / ' ' #TEXT (5)
§ IF #TEXT(1) = ' '
§ REINPUT WITH TEXT 'PURPOSE IS REQUIRED'
§ END-IF
*****
* PROGRAM: $#PROGRAM DATE CREATED: $*DATD BY: $*USER
* -----
* PURPOSE:
§ FOR #I = 1 TO 5
§ IF #TEXT(#I) NE ' '
* $#TEXT(#I)
§ END-IF
§ END-FOR
* -----
* PROGRAM HISTORY
* DATE USER-ID REF-NO DESCRIPTION
*****
*

```

The following figure shows the result of the INPUT statement in the macro when the program is invoked from an edit session with program NEWPROG in library NSPFWORK:

```

EDIT-NAT: NSPFWORK(NEWPROG)-Program->Struct-Free-29K - >>> Versioning is invoked
COMMAND==> COPY MAC MAC-HEAD                                SCROLL==> CSR
***** ***** top of data *****
***** ***** bottom of data *****

+-----+
! ----- PROGRAM HEADING INFORMATION ----- !
! PROGRAM: NEWPROG  LIBRARY: NSPFWORK          !
! PURPOSE: This program demonstrates something _____ !
! _____ !
! _____ !
! _____ !
! _____ !
! Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10- !
!      Help  Split End   Suspe Rfind Rchan Up    Down  Swap  Left  !
+-----+

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Split End   Suspe Rfind Rchan Up    Down  Swap  Left  Right Curso

```

Another useful example called COPYSYS can be found in the Example Library. This program copies a member which is edited to the library SYSLIB.

## ISP-U001 - Access Shortlibs Program

This program allows user programs to access short library names defined in Natural ISPF either in the user profile or in the global shortlib table. If an entry is found, the dataset name and volser of the dataset is returned.

Parameter	Format	Type	Meaning
#IN-SHORT	(A2)	I	2-byte library abbreviation.
#OUT-DSN	(A44)	O	Dataset name, if given abbreviation was found.
#OUT-VOLSER	(A6)	O	Volser, if defined in profile.

## ISP-U002 - Retrieve Error Texts Program

This program can be used to retrieve error texts from the Natural ISPF Error Message Library SYSISPSx (where **x** is the current language code). If a text is not found for the current language code, the English text is returned.

Parameters can be replaced in the error text.

This program can only be used by Open NSPF programs, which are executed from SYSLIB. This program will not work if invoked from any user application.

Parameter	Format	Type	Meaning
#ERR-NUMBER	(N4)	I	Error number to be retrieved.
#ERR-TEXT	(A75)	O	Text, including substituted parameters.
#ERR-PARM	(A75)	I	Parameters separated by (;). Formal parameters in the text must be specified as <b>:n:</b> , where <b>n</b> is the number of the parameter.

**Note:**

Error messages 9000 - 9999 are reserved for use by your site.

## ISP-U003 - Read Data from Edit Session Program

This program can be used to read data from an edit session. When using this program, you must use the ISP-U03A data area which contains the following fields:

Parameter	Format	Type	Meaning
#LINES	(A132/20)	O	Data lines from the Editor session, a maximum of 20 lines can be read in one call.
#ED-SESNUM	(B2)	I	Editor session number.
#ERROR-NUMBER	(N4)	O	Error number, 0 if function was executed correctly.
#LINES-READ	(N2)	O	Number of lines returned in field #LINES.
#LINES-TO-READ	(N2)	I/O	Number of lines to read in 1 call
#LINE-LENGTH	(N4)	O	Length of the lines.
#ED-NUM	(N6)	W	Do not modify between calls.
#EOF	(L)	O	True if the last lines have been read.

**Example:**

```

DEFINE DATA
  LOCAL USING ISP-U03A
  LOCAL
  1 #I      (N2)
  END-DEFINE
  INPUT #ED-SESNUM
  *
  MOVE 20 TO #LINES-TO-READ
  *
  WRITE 'user processing of a macro result' //
  *
  REPEAT
    CALLNAT 'ISP-U003' #READ-PARM
    IF #ERROR-NUMBER NE 0
      WRITE '=' #ERROR-NUMBER
      ESCAPE BOTTOM
    END-IF
    FOR #I = 1 TO #LINES-READ
      PERFORM LINE-PROCESSING
    END-FOR
    IF #EOF
      ESCAPE BOTTOM
    END-IF
  END-REPEAT
  *
  DEFINE SUBROUTINE LINE-PROCESSING
  PRINT #LINES(#I)
  END-SUBROUTINE
END

```

## ISP-U004 - Pass Command Script Program

This subprogram can be used to pass a command script (that is, a sequence of Natural ISPF commands) to Natural ISPF and to execute it when Natural ISPF is invoked next time. See also member ISP-COAP in the example library.

Parameter	Format	Type	Meaning
#IN-LINES	(N2)	I	Number of lines to be processed in IN-COMMANDS.
#COMMAND-POS	(A1)		For future use.
#FUNCTION	(A1)		For future use.
#RC	(N2)	O	Return code: <b>0</b> Processing terminated ok. <b>1</b> Natural ISPF is not active. <b>2</b> Processing terminated with error.

## ISP-U005 - Check for Natural Member Versions Program

Subprogram checks whether versions (update decks) for a Natural member exist.

Parameter	Format	Type	Meaning
#IN-LIBRARY	(A8)	I	Natural library name.
#IN-MEMBER	(A8)	I	Natural member name.
#RC	(N4)	O	Return code: <b>0</b> Processing terminated ok.
#OUT-VERSION	(L)	O	TRUE Versions for this member exist.
#GEN-VERSION	(L)	O	FALSE Natural ISPF versioning is not active in this environment.

## ISP-U006 - Set Source Area Attributes Program

Subprogram sets source area attributes and is used in macro processing.

Parameter	Format	Type	Meaning
#IN-MEMBER	(A8)	I	Member name to be set.
#IN-TYPE	(A1)	I	Natural object type to be set.
#IN-MODE	(A1)	I	Programming mode (S/R) to be set.

## ISP-U007 - Check User Authorization Program

This subprogram checks whether the current user is authorized to use Natural ISPF or certain parts of its functionality.

Parameter	Format	Type	Meaning
#IN-OBJECT	(A2)	I	2-character code of Natural ISPF object being checked (leave blank to check if user is authorized to access any object).
#IN-FUNCTION	(A2)	I	2-character code of Natural ISPF object being checked (leave blank to check if user is authorized to use any function valid for a specific object; irrelevant if IN-OBJECT is blank).
#RC	(N4)	O	Return code: 0 User is authorized. -1 User is not authorized. >0 'Error in execution'. Use USR0320N to retrieve error text from library SYSISP1. = -NNNN Natural runtime error NNNN has occurred during execution. Use USR0120N to retrieve error text.